

RESPONSE UNDER 37 C.F.R. § 1.116  
Application No.: 09/315,068

Attorney Docket No.: Q54431

The Examiner asserts that:

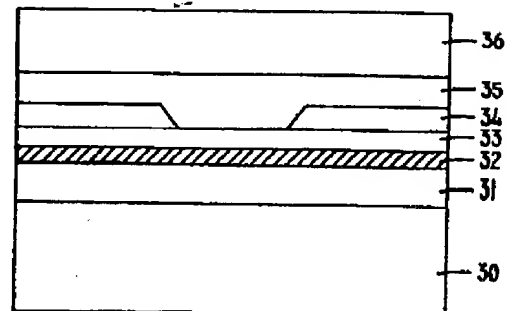
Inoguchi teach[es] in Fig. 10 of <sic> the upper cladding layer 35 is selectively removed, the current blocking layer 34, and the thickness of the waveguide layer at 0.3  $\mu\text{m}$  (col. 3, l. 24-25). For the benefit of enhancing the long reliability of the semiconductor laser, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Prior art part of the upper cladding layer is selectively removed, the current blocking layer, and the thickness of the waveguide layer greater than 0.25 as taught by Inoguchi. With respect to claims 6-7 and 15-16, Inoguchi disclose[s] the thickness of the upper cladding layer at 1  $\mu\text{m}$  (col. 3, l. 38-39).

**Claims 1, 2, 5, 6, 7, 8, 10, and 11**

Inoguchi does not disclose selectively removing a portion of the upper cladding layer 35. Rather, as demonstrated in Figs. 8-10 of Inoguchi, current blocking layer 34 is etched to provide a groove, and then the upper cladding layer 35 is deposited in the groove.

However, independent claim 1 describes a semiconductor laser, such that the "selectively removed" *process* aspect of the claim does not need to be given patentable weight during prosecution. Even so, the structure implied by the "selectively removed" *process* step must be considered when assessing the patentability of the claim over the prior art.

Applicants respectfully submit that the structure as illustrated in FIG. 10 of Inoguchi, is not indicative of the structure implied by the "selectively removed" language of the claim:



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Where the manufacturing steps would be expected to impart distinctive structural characteristics to the final product, the structure implied by the process steps must be considered. See MPEP § 2113.

Further, the Examiner has not presented a *prima facie* case of obviousness. Specifically, the motivation offered by the Examiner to combine FIG. 10 of Inoguchi with "the admitted prior art" is "for the benefit of enhancing the long reliability of the semiconductor laser." This "motivation to combine" comes not from the applied art, but rather is copied from the *Summary of The Invention* of the present application (see, e.g., page 6, lines 15-20), which is improper and clearly supports that the Examiner is engaging in hindsight. Moreover, FIG. 10 of Inoguchi is "prior art," and the improvements and benefits disclosed in Inoguchi are not benefits of the structure of FIG. 10.

Further, the passage of Inoguchi disclosing a waveguide layer with a thickness of 0.3  $\mu\text{m}$  (FIG. 22, column 3, lines 24-25) is part of a completely different structure within Inoguchi than FIG. 10. No motivation is offered within Inoguchi, or by the Examiner, for applying the structural features of FIG. 22 of Inoguchi to FIG. 10 of Inoguchi. Features from different embodiments cannot arbitrarily be combined absent a reason or suggestion to do so. Moreover, with regard to combining FIG. 22 of Inoguchi with "the admitted prior art," there is no suggestion in Inoguchi that the structure of FIG. 22 results in "the benefit of enhancing the long reliability of the semiconductor laser."

Additionally, the waveguide thickness of 0.3  $\mu\text{m}$  at column 3 of Inoguchi refers to an intermediate form which is subsequently reduced to have a mesa height of only 0.15  $\mu\text{m}$ .

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Characteristics of the intermediate product cannot be used to render the claims unpatentable. *See In re Mullin*, 197 USPQ 97, 100 (CCPA 1973).

For at least these reasons, Applicants submit that independent claim 1 is patentable. Claims 2, 5, 6, 7, 8, 10, and 11 are also patentable, at least as further limitations on claim 1. Further, with regard to claim 6, there is no suggestion of "the long reliability" nor any motivation offered by Inoguchi for utilizing the second cladding layer 406 of 1  $\mu\text{m}$  (FIG. 22) with the structure of FIG. 10.

**Claims 12, 13, 14, 15, 16, 17, 19, and 20.**

Applicants respectfully submit the Examiner is engaging in improper hindsight. As discussed above in relation to claim 1, the only motivation offered to combine the current blocking layers FIG. 10 of Inoguchi with "the admitted prior art" comes from the *Summary of The Invention* in the present application. Likewise, the Examiner lacks motivation for combining structural features of FIG. 22 of Inoguchi with structural features of FIG. 10 of Inoguchi, and the intermediate waveguide thickness does not meet the claim requirements.

For at least these reasons, Applicants submit that independent claim 12 is patentable. Claims 13, 14, 15, 16, 17, 19, and 20 are also patentable, at least as further limitations on claim 12. Further, with regard to claim 15, there is no suggestion of "the long reliability" nor any motivation offered by Inoguchi for utilizing the second cladding layer 406 of 1  $\mu\text{m}$  (FIG. 22) with the structure of FIG. 10.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

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Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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